

REMARKS-General

1. The newly drafted independent claim 28 incorporates all structural limitations of the original claim 1 and includes further limitations previously brought forth in the disclosure. No new matter has been included. All new claims 28-30 are submitted to be of sufficient clarity and detail to enable a person of average skill in the art to make and use the instant invention, so as to be pursuant to 35 USC 112.

Response to Rejection of Claims 25-27 under 35USC103

2. The Examiner rejected claims 25-27 over Nishio et al (US 6,437,502) in view of Ge at al (US 6,515,433). Pursuant to 35 U.S.C. 103:

“(a) A patent may not be obtained though the invention is **not identically** disclosed or described as set forth in **section 102 of this title**, if the **differences** between the subject matter sought to be patented and the prior art are such that the **subject matter as a whole would have been obvious** at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.”

3. In view of 35 U.S.C. 103(a), it is apparent that to be qualified as a prior art under 35USC103(a), the prior art must be cited under 35USC102(a)~(g) but the disclosure of the prior art and the invention are not identical and there are one or more differences between the subject matter sought to be patented and the prior art. In addition, such differences between the subject matter sought to be patented **as a whole** and the prior art are obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

4. In other words, the differences between the subject matter sought to be patent as a whole of the instant invention and Nishio et al which is qualified as prior art of the instant invention under 35USC102(b) are obvious in view of Ge at al at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

5. The claiming subject matter of the instant invention is an illuminable unit having a spiral shape. Accordingly, the illuminable unit of the instant invention comprises a light tube having a spiral-shaped light body and two parallel end portions. As it is stated in the background of the specification, U-shaped light tubes and spiral-shaped light tubes are among the most popular shapes for the fluorescent lamp. However, the light emitting effectiveness of the spiral-shaped light tube is better than that of the U-shaped light tube. In addition, the size of the U-shaped light tube is bigger than that of the spiral-shaped light tube. On the other hand, the major drawback of the spiral-shaped light tube is that the two end portions thereof are inclinedly extending such that the tube must be mounted at the end portion of the light tube at a slanted position. In other words, the manufacturing cost of the spiral-shaped light tube is higher than that of the U-shaped light tube.

6. Regarding to claim 28, Nishio et al merely teaches a U-shaped bent bulb 31 having a bent portion 31a and a pair of straight portions 31b. As recited above, the U-shaped bent bulb 31 of Nishio et al has lesser light emitting effectiveness and bigger size in comparison with the spiral-shaped illuminable unit of the instant invention. The instant invention provides a spiral shaped illuminable unit having the distinctive features of the combination of the conventional spiral shaped light tube and the conventional U-shaped light tube by configuring the spiral-shaped light body with the conductor enclosure having a particular length and being mounted at the end portion of the light tube to extend the cathode terminal to the light body.

7. In addition, Nishio et al merely teaches the minute tube 41 is mounted at the end of the straight portion 31b of the U-shaped bent bulb 31. Accordingly, the straight portion 31b of the U-shaped bent bulb 31 is relatively long in comparison with the minute tube 41 such that the length of the minute tube 41 is not a main factor for the U-shaped bent bulb 31.

8. The applicant respectfully submits that the length of the conductor enclosure of the instant invention is one of the main factors in order to incorporate with the spiral-shaped light body of the instant invention. Regarding to claim 28, the length of the conductor enclosure is approximately equal to the length of the end portion of the light tube such that when the conductor enclosure is mounted and sealed at the bottom end of the end portion of the light tube, the upper head portion of the conductor enclosure is

upwardly extended to the spiral-shaped light body so as to substantially reduce an overall height of the illuminable unit. In other words, the instant invention not only provides a compact size illuminable unit by configuring the light tube in a spiral shape but also further reduces the length of the illuminable unit by configuring the conductor enclosure into the end portion of the light tube. Nishio et al is silent regarding such concept.

9. Regarding to claim 28, the instant invention discloses the cathode terminal extended from the upper head portion of the conductor enclosure to the light body of the light tube. Accordingly, since the length of the conductor enclosure is approximately equal to the length of the end portion of the light tube, the cathode terminal must be extended from the upper head portion of the conductor enclosure at a slanted position. As shown in Figures 1 and 2 of the instant invention, the cathode terminal is extended in a slanted position and is coaxially extended to the light body. In fact, the cathode terminal is extended at an angle corresponding to the angle of the light body. However, Nishio et al does not teach how to configure the minute tube 41 with the straight portion 31b of the U-shaped bent bulb 31 because the bent bulb 31 is not formed in spiral shape.

10. The instant invention further provides an unexpected result of configuring the conductor enclosure with the end portion of the light tube. Since the conductor enclosure is approximately equal to the length of the end portion of the light tube, the cathode terminal must be extended to the light tube such that the cathode terminal can be effectively communicate with the interior of the light tube for electrifying the mercury source. Since the minute tube 41 of Nishio et al is mounted at the end of the straight portion 31b of the U-shaped bent bulb 31, the copper-weld wires 45 can be extended along the straight portion 31b of the U-shaped bent bulb 31. However, such structural configuration taught by Nishio et al cannot be used in spiral-shaped light tube.

11. Regarding to claims 29 and 30, the instant invention discloses the mercury source can be liquid mercury or amalgam. Accordingly, amalgam is a mixture of mercury with metal or alloy, which is different from liquid mercury. Accordingly, since the cathode terminal is extended from the upper head portion of the conductor enclosure to the light body, the cathode terminal can be effectively communicate with the interior of the light tube for electrifying the mercury source. However, the copper-

weld wires 45 can be extended within the straight portion 31b of the U-shaped bent bulb 31 to communicate with the interior thereof through the straight elongated structure.

12. Whether the claims 28 to 30 as amended of the instant invention are obvious depends on whether the above differences between the instant invention and Nishio et al are obvious in view of Ge at el at the time of the invention was made. In other words, the differences are obvious whether the minute tube structure of Nishio et al can be incorporate with the spiral structure of the hot cathode fluorescent lamp taught be Ge at el or not.

13. Furthermore, the applicant respectfully submits that when applying 35 USC 103, the following tenets of patent law must be adhered to:

- (a) The claimed invention must be considered as a whole;
- (b) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (c) The references must be viewed without the benefit of hindsight vision afforded by the claimed invention; and
- (d) Reasonable expectation of success is the standard with which obviousness is determined.

Also, "The mere fact that a reference could be modified to produce the patented invention would not make the modification obvious unless it is suggested by the prior art." Libbey-Owens-Ford v. BOC Group, 4 USPQ 2d 1097, 1103 (DCNJ 1987).

14. Ge at el merely teaches a hot cathode fluorescent lamp comprises the electrodes 212 disposed at the end portions (not number) of the CCFL tube 1' and two wires 110 extended from the electrodes 212. Ge at al is silent regarding any minute tube or conductor enclosure mounted and sealed at the end portion of the tube 1'. Even though modifying the U-shaped bent bulb 31 of Nishio et al with the spiral shaped tube 1' of Ge at al, as proposed by the Examiner, the fluorescent lamp of Nishio et al would not provide a spiral shaped light body incorporating with the conductor enclosure having a length approximately equal to a length of the end portion of the light tube to support the cathode terminal extending to the light body of the light tube so as to further reduce

the overall height of the illuminable unit of the instant invention. In other words, even though the U-shaped bent bulb 31 of Nishio et al is modified to form a spiral structure, the fluorescent lamp of Nishio et al would not incorporate with the minute tube 41 having a length corresponding to the length of the end portion to support the copper-weld wires 45 in such configuration.

15. "To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited art references for combination in the manner claimed... [T]he suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness..." *In re Gorman*, 933 F.2d 982, 986, 18 USPQ 2d 1885, 1888 (Fed. Cir. 1991).

16. Accordingly, the applicant believes that neither Nishio et al nor Ge et al, separately or in combination, suggests or makes any mention whatsoever of the difference subject features as claimed in the claims 28 to 30 of the instant invention.

17. Applicant believes that for all of the foregoing reasons, all of the claims are in condition for allowance and such action is respectfully requested.

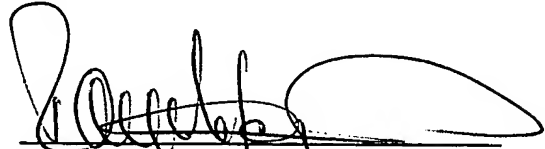
The Cited but Non-Applied References

18. The cited but not relied upon references have been studied and are greatly appreciated, but are deemed to be less relevant than the relied upon references.

19. In view of the above, it is submitted that the claims are in condition for allowance. Reconsideration and withdrawal of the objection are requested. Allowance of claims 28 to 30 at an early date is solicited.

20. Should the Examiner believe that anything further is needed in order to place the application in condition for allowance, he is requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

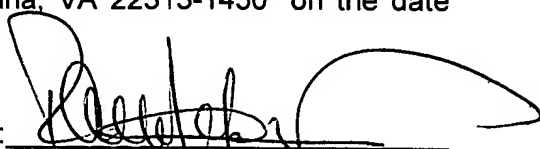


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